**Test Cases for Program 4**

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Section \_\_006\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Use as many table lines as you need, there may be lines left over. You should have a sufficient number of test cases without being redundant. **You are free to add another table if you think it is warranted, and you can add or delete columns as you think needed.**

**Testing main function (commands) At least 5 more cases**

|  |  |  |
| --- | --- | --- |
| **Description of case** | **Commands (Inputs)** | **Expected actions** |
| insert command | + ford.com 91.134.11.8 | ford.com 91.134.11.8 are inserted in appropriate places in tables, output ‘addition successful’ |
| Remove command | - ford.com | Ford.com and 91.134.11.8 are removed from tables, output ‘removal successful’ |
| Lookup command by domain | ? ford.com | Output  ‘Domain: ford.com  IP: 91.134.11.8’ |
| Lookup command by ip | ? 91.134.11.8 | Output  ‘Domain: ford.com  IP: 91.134.11.8’ |
| Sort command by domain | S Domain | Sort tables by domain in ascending order, maintain parallel array |
| Sort command by IP | S IP | Sort tables by IP in ascending order, maintain parallel array |
| List command | L | Lists the domains and corresponding IP numbers in parallel array style |
| Invalid command | Z ford.com | Add 1 to invalid commands counter, output ‘Invalid command’ |

**Testing main function (file actions) at least 3 more cases**

|  |  |  |
| --- | --- | --- |
| Description | File input/filename input | Expected actions |
| (Example) Invalid filename | xyz.txt | error message and another ask for filename |
| Invalid kind of file (needs to be .txt) | DNSCommands.pdf | Error message and another ask for filename |
| File not found | (any file name that doesn’t exist) | Error message and another ask for filename |
| File name is correct, exists, and in correct format | DNSCommands.txt | Open the file and read it one line at a time |

**Testing put\_in function At least two more cases**

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| --- | --- | --- |
| **Description of case** | **Input (Parameters)** | **Expected Return value/Side Effects** |
| (Example) New domain name, new IP number inserted into tables that are not empty | "amazon.com", 199.23.141.5, domain name and IP number tables have 3 rows each | Both tables are one entry longer, four rows each, with new data inserted at end of tables |
| Domain name already in list, changing IP number | **“**ford.com”, 91.134.11.8, domain name at first position in table, tables have 1 row each | IP at first position changed to 91.134.11.8 in IP table, domain table stays the same, tables have 1 row each |
| new domain and IP added to tables that are empty | “cs.uky.edu”, 128.163.146.21, tables are empty | “cs.uky.edu” becomes first entry in domain table, 128.163.146.21 becomes first entry in IP table, tables have 1 row each |

**Testing take\_out function At least one more case**

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| --- | --- | --- | --- |
| **Description of case** | **(parameters)** | **Expected action** | **Expected Return value** |
| (Example) Successful removal from a table with more than 1 entry | 'apple.com', domain name and IP number tables with 2 rows each | the domain name and associated IP number are removed from the tables,  tables are left with 1 row each | True |
| Successful removal from a table with 1 entry | ‘cs.uky.edu’, domain name and IP tables have 1 row each | domain name and its IP are removed from tables, tables now empty | True |
| Unsuccessful removal from empty tables | ‘ford.com’, domain name and IP tables are empty | Tables are not altered | False |

**Testing table\_lookup At least three more cases**

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| --- | --- | --- |
| **Description of case** | **Inputs (parameters)** | **Expected actions/return value** |
| (Example) Successful search for domain name | whitehouse.gov | returns associated IP number |
| Successful search for IP number | 128.163.146.21 | Returns associated domain name |
| Unsuccessful search for domain name | toyota | Returns -1 |
| Unsuccessful search for IP number | 34987345678 | Returns -1 |

**Testing selection\_sort function At least three more cases (think about sizes of tables)**

|  |  |  |
| --- | --- | --- |
| **Description of case** | **Inputs (Parameters)** | **Expected actions** |
| **(**Example) Sorts by domain name, tables have more than one row each | domain name and IP number tables with three rows each, "Domain" | both tables are sorted in ascending alphabetical order by the domain names, tables are three rows each, no return value |
| Sorts by domain name, tables have one row each | domain name and IP number tables with one row each, “Domain” | Both tables do not change since there is only one row each, no return value |
| Sorts by IP name, tables have one row each | Domain name and IP number tables with one row each, “IP” | Both tables do not change since there is only one row each, no return value |
| Sorts by IP name, tables have more than one row each | Domain name and IP number tables with four rows each, “IP” | Both tables are sorted in ascending “ASCII”-betical order by the IP numbers, tables are four rows each, no return value |
| Sort by domain name, tables have zero rows | Empty domain name and IP number tables, “Domain” | Both tables do not change since they are empty, no return value |

**Testing display\_lists At least 2 more cases**

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| --- | --- | --- |
| **Description of case** | **Inputs (Parameters)** | **Expected actions** |
| (Example) tables with more than one row each | domain name and IP number tables with 3 rows each | All rows of each table displayed in expected format, no return value |
| Empty tables | Domain name and IP number tables with zero rows each | No return value, prints “Domain Name” and “IP Number” headers in expected formatting, no rows displayed |
| Tables with one row each | Domain name and IP number tables with one row each | no return value, prints “Domain Name” and “IP Number” headers in expected formatting, one row displayed |